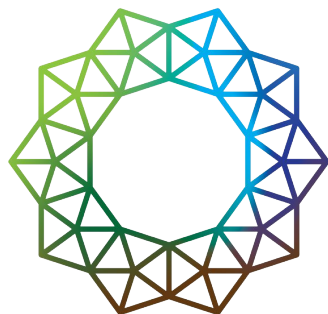




U.S. DEPARTMENT OF
ENERGY

Office of
Science

AmeriFlux Webinar For Data Users



AMERIFLUX
MANAGEMENT PROJECT

Webinar Goals:

Who should attend?


- Data users who are interested in AmeriFlux data products.
- Data providers who are interested in learning more about how their data are used.

Presentation (~40 minutes)


- AmeriFlux overview
- AmeriFlux data
- Data use and data use policy
- Data discovery web features
- Gap-filled and partitioned data from ONEFlux
- Data users panel
- Feedback from you about AmeriFlux data

This webinar is being
recorded.

Mute during presentation.
Unmute for Q&A.



View chat window.
Send messages for questions,
comments & zoom help.



Technical support in webinar
AMP-webinars@lbl.gov

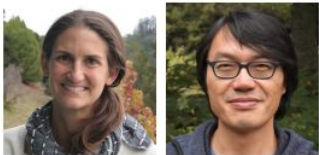
Poll:

Have you downloaded data from the AmeriFlux website before?

Check out the “Data Life Cycle” webinar

Post-submission Data Life Cycle: FP-In to BASE Publishing

Hosted by AmeriFlux Data Team



Danielle Svehla Christianson, Housen Chu

Deb Agarwal, You-Wei Cheah, Fianna O’Brien,
Gilberto Pastorello, Rachel Hollowgrass, Marty Humphrey



Slides and recordings of all previous webinars are available at:

<https://ameriflux.lbl.gov/community/amp-webinar-series/>

About AmeriFlux

- Created in 1996 by a group of scientists.
- 15 sites in 1997.
- In 2012, the U.S. DOE established the AmeriFlux Management Project (AMP) at Lawrence Berkeley National Laboratory (LBNL).
- 390 sites with published data today.

=> 2605 site years of data.



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Science



Updated AmeriFlux Data Use License



Deb Agarwal
AMP Data Team lead

- Use the Data-Download form to describe how you plan to use the data and if you plan to use in publications. This statement is sent to the data contributor(s), and then posted to the AmeriFlux Data Download Log.
- When you start in-depth analysis that may result in a publication, **contact the data contributors directly**, so that they have the opportunity to contribute substantively and become a co-author.

Acknowledge AmeriFlux data in publications

- Cite the relevant site DOI and dataset citation listed on its Site General Info page (DOI tab) or use Site Set for DOI citation generation.
- Inform all data providers when publications are about to be published.
- Acknowledge the AmeriFlux data resource: “Funding for AmeriFlux data resources was provided by the U.S. Department of Energy’s Office of Science.”

Acknowledge AmeriFlux data in presentations

- Use the AmeriFlux logo and/or the AmeriFlux web link (<https://ameriflux.lbl.gov>)
- List AmeriFlux sites using their SiteIDs and/or site name

New AmeriFlux CC BY 4.0 Data Use License (by Fall 2021)

CCby4

- Data free for use and reuse
- Proper citation/acknowledgement still required (specifics provided)
- Sites receive data download notifications



Support sites who remain on older “AmeriFlux policy”

- Data quality checks and BASE publish
- Limited data and tech services – e.g. no ONEFlux processing, lower priority for services
- One data policy per site
- AmeriFlux core sites and NEON have indicated that their data can be CCby4 - starting invites now and have 108 sites moving so far.

New CC BY 4.0 AmeriFlux License

CC-BY-4.0 data are available following the guidelines of the CC-BY-4.0 data usage license (Creative Commons by Attribution 4.0 International; <https://creativecommons.org/licenses/by/4.0/>). The CC-BY-4.0 license specifies that the data user is free to Share (copy and redistribute the material in any medium or format) and/or Adapt (remix, transform, and build upon the material) for any purpose.

Use of AmeriFlux data shared under the CC-BY-4.0 license should follow these attribution guidelines:

- * For each AmeriFlux site used: Provide a citation to the site's dataset. The citation should include the dataset DOI.

Note:

Collaboration with data providers (AmeriFlux PIs) is not required under CCBY4.0, but it can help avoid misinterpretation or other data issues and is appreciated by data providers.

Regardless, it is recommended that data users inform data providers of forthcoming publications using a site's data. An email list of AmeriFlux PIs for the downloaded sites is provided to the data user with data download.

AmeriFlux Data

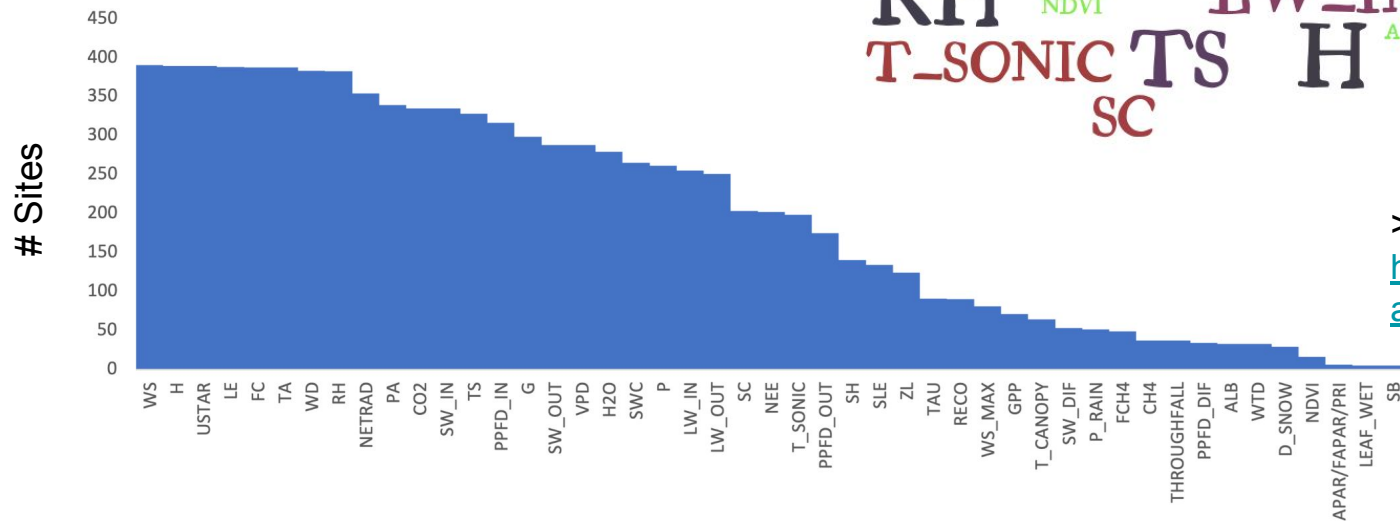
What is “BASE”?

½ hourly or hourly
time series observations

AmeriFlux Data

What is “BASE”?

½ hourly or hourly
time series observations



>130 variables

<https://ameriflux.lbl.gov/data/aboutdata/data-variables>



What to expect from AmeriFlux data?

Pros:

- A lot of data!
- Diversity - of ecosystem types and environments.
- Direct and continuous observations of how ecosystems respond to environmental change.
- Carbon, water, energy and climate.

Cons:

- Uncertainty - both random and systematic error
- Gaps - instruments break, power goes off, weather becomes 'unclement', towers fall over, etc.
- The unexplained (beavers build dams, trees mast, cicadas emerge en mass, ice-storms defoliate)

AmeriFlux Data

Who's BADM?!

'Know thy site!'
Ray Leuning

AmeriFlux Data

Who's BADM?!

Biological Ancillary Data Metadata

'Know thy site!'

Ray Leuning

BIF: the BADM Interchange Format

Site General Info

- COUNTRY (Geographic Country)
- URL_AMERIFLUX (AmeriFlux URL)
- HEADER (Site ID, Site Name, Submission details)
- TEAM_MEMBER (Team Membership)
- TEAM_CONTACT
- SHIPPING_ADDRESS
- NETWORK (Network Affiliations)
- FLUX_MEASUREMENTS
- STATE (Geographic State)
- SITE_DESC (Site Description)
- RESEARCH_TOPIC
- SITE_FUNDING
- LOCATION (Geographic Location)
- IGBP (International Geosphere-Biosphere Programme)
- LAND_OWNERSHIP
- URL (Site Website)
- REFERENCE_PAPER (References)
- ACKNOWLEDGEMENT
- UTC_OFFSET
- CLIM_AVG (Average Climate)
- SITE_CHAR (Site Characteristics)
- DOM_DIST_MGMT (Dominant Disturbance and Management)
- TOWER_TYPE
- TOWER_POWER

Doi

- DOI (Digital Object Identifier)
- DOI_ORGANIZATION (DOI Organizations)
- DOI_CONTRIBUTOR (DOI Contributors)
- DOI_RELATED_DATA_DOI (Related DOI Information)

VegCover

- SPP (Species Cover)
- LAI (Leaf Area Index)
- HEIGHTC (Canopy Height)
- SA (Stand Age)
- DBH (Diameter at Breast Height)
- BASAL_AREA
- TREES_NUM (Number of Trees)
- ROOT_DEPTH
- PHEN_EVENT_TYPE (Phenological Events)

Instrument

- INST (Instrument Information)
- INSTPAIR (Instrument Pairing Information)

Disturbance and Management

- DM_AGRICULTURE (Crop Management)
- DM_ENCROACH (Encroachment)
- DM_EXT_WEATHER (Extreme Weather)
- DM_FERT_M (Mineral Fertilization)
- DM_FERT_O (Organic Fertilization)
- DM_FIRE (Fire)
- DM_FORESTRY (Forestry Management)
- DM_GRAZE (Grazing)
- DM_INS_PATH (Insect, Pathogen, Disease)
- DM_PESTICIDE (Pesticide Application)
- DM_PLANTING (Planting)
- DM_TILL (Tillage)
- DM_WATER (Water Management)
- DM_GENERAL (General Disturbance)

Instrument Ops

- INSTOM (Instrument Operations)

Soil

- SOIL_CHEM (Soil Chemical Concentration)
- SOIL_STOCK (Soil Chemical Stock)
- SOIL_TEX (Soil Texture)
- PFCURVE (Water Retention Curve)
- WTD (Water Table Depth)
- SWC (Soil Water Content)
- SOIL_WRB_GROUP (Soil World Reference Base Group)
- SOIL_ORDER
- SOIL_CLASSIFICATION
- SOIL_SERIES
- SOIL_DEPTH

AmeriFlux Data

Who's BADM?!

Biological Ancillary Data Metadata

5149	US-Ha1	17698	GRP_TREES_NUM	TREES_NUM_SPP	Acer pennsylvanicum
5150	US-Ha1	17698	GRP_TREES_NUM	TREES_NUM_DATE	00101207
5151	US-Ha1	17698	GRP_TREES_NUM	TREES_NUM_SPATIAL_REP_NUMBER	04
5152	US-Ha1	17698	GRP_TREES_NUM	TREES_NUM_SPATIAL_VARIABILITY	0.28
5153	US-Ha1	17743	GRP_TREES_NUM	TREES_NUM	0.39
5154	US-Ha1	17743	GRP_TREES_NUM	TREES_NUM_SPP	Acer pennsylvanicum
5155	US-Ha1	17743	GRP_TREES_NUM	TREES_NUM_DATE	00111201
5156	US-Ha1	17743	GRP_TREES_NUM	TREES_NUM_SPATIAL_REP_NUMBER	04
5157	US-Ha1	17743	GRP_TREES_NUM	TREES_NUM_SPATIAL_VARIABILITY	0.28
5158	US-Ha1	17788	GRP_TREES_NUM	TREES_NUM	0.39
5159	US-Ha1	17788	GRP_TREES_NUM	TREES_NUM_SPP	Acer pennsylvanicum
5160	US-Ha1	17788	GRP_TREES_NUM	TREES_NUM_DATE	00121204
5161	US-Ha1	17788	GRP_TREES_NUM	TREES_NUM_SPATIAL_REP_NUMBER	04
5162	US-Ha1	17788	GRP_TREES_NUM	TREES_NUM_SPATIAL_VARIABILITY	0.28
5163	US-Ha1	17833	GRP_TREES_NUM	TREES_NUM	0.39
5164	US-Ha1	17833	GRP_TREES_NUM	TREES_NUM_SPP	Acer pennsylvanicum
5165	US-Ha1	17833	GRP_TREES_NUM	TREES_NUM_DATE	00131212
5166	US-Ha1	17833	GRP_TREES_NUM	TREES_NUM_SPATIAL_REP_NUMBER	04
5167	US-Ha1	17833	GRP_TREES_NUM	TREES_NUM_SPATIAL_VARIABILITY	0.28
5168	US-Ha1	17888	GRP_TREES_NUM	TREES_NUM	0.39
5169	US-Ha1	17888	GRP_TREES_NUM	TREES_NUM_SPP	Acer pennsylvanicum
5170	US-Ha1	17888	GRP_TREES_NUM	TREES_NUM_DATE	00991027
5171	US-Ha1	17888	GRP_TREES_NUM	TREES_NUM_SPATIAL_REP_NUMBER	04
5172	US-Ha1	17888	GRP_TREES_NUM	TREES_NUM_SPATIAL_VARIABILITY	0.28
5173	US-Ha1	17948	GRP_TREES_NUM	TREES_NUM	0.39
5174	US-Ha1	17948	GRP_TREES_NUM	TREES_NUM_SPP	Acer pennsylvanicum
5175	US-Ha1	17948	GRP_TREES_NUM	TREES_NUM_DATE	00001024
5176	US-Ha1	17948	GRP_TREES_NUM	TREES_NUM_SPATIAL_REP_NUMBER	04
5177	US-Ha1	17948	GRP_TREES_NUM	TREES_NUM_SPATIAL_VARIABILITY	0.28
5178	US-Ha1	18007	GRP_TREES_NUM	TREES_NUM	0.39
5179	US-Ha1	18007	GRP_TREES_NUM	TREES_NUM_SPP	Acer pennsylvanicum
5180	US-Ha1	18007	GRP_TREES_NUM	TREES_NUM_DATE	00011206
5181	US-Ha1	18007	GRP_TREES_NUM	TREES_NUM_SPATIAL_REP_NUMBER	04
5182	US-Ha1	18007	GRP_TREES_NUM	TREES_NUM_SPATIAL_VARIABILITY	0.28
5183	US-Ha1	18067	GRP_TREES_NUM	TREES_NUM	0.39
5184	US-Ha1	18067	GRP_TREES_NUM	TREES_NUM_SPP	Acer pennsylvanicum
5185	US-Ha1	18067	GRP_TREES_NUM	TREES_NUM_DATE	00021114
5186	US-Ha1	18067	GRP_TREES_NUM	TREES_NUM_SPATIAL_REP_NUMBER	04
5187	US-Ha1	18067	GRP_TREES_NUM	TREES_NUM_SPATIAL_VARIABILITY	0.28
5188	US-Ha1	18127	GRP_TREES_NUM	TREES_NUM	0.39
5189	US-Ha1	18127	GRP_TREES_NUM	TREES_NUM_SPP	Acer pennsylvanicum
5190	US-Ha1	18127	GRP_TREES_NUM	TREES_NUM_DATE	00031113
5191	US-Ha1	18127	GRP_TREES_NUM	TREES_NUM_SPATIAL_REP_NUMBER	04
5192	US-Ha1	18127	GRP_TREES_NUM	TREES_NUM_SPATIAL_VARIABILITY	0.28
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- SOIL_ORDER
- SOIL_CLASSIFICATION
- SOIL_SERIES
- SOIL_DEPTH

BIF: the BADM Interchange Format

Poll:

Have you used BADM data before?

AmeriFlux Data Discovery

Search / Download / Map / Site Sets



Margaret
Torn
AMP Lead PI

Search AmeriFlux Sites

https://ameriflux.lbl.gov/sites/site-search/#filter-type=all&has-data=Yes&site_id=

LBL Phone Dir Google Scholar G Mail AmeriFlux: Measurin... Master's Project Se... YouTube Thesaurus.com | Sy... Netflix Google Drive B Se

AMERIFLUX

Home About Community Sites Data Tech Theme Years Resources Sign In

Home / Sites / Site Search Quick Sites: Sign in to Use

Site Search

Select Sites Customize Map This interface is not yet optim

Include: ☐ Sites with and without Available Data ☒ Sites with Data ☐ Sites without Data

Search Results: 390 sites

Search sites and their content

Clear Search Copy search results to clipboard Download Data Using Search Results

Save/Load Site Sets

Save/Load Site Searches

Advanced Filters

Only Show Checkmarked Sites Customize Map Show Map: None

Site Id	Name	Data	Lat	Long	Elev (m)	Veg	Clim	MAT (°C)	MAP (mm)	Site Start	Site End	Data Start	Data End
AR-TF1	Rio Most bog	●	-54.9733	-66.7335	40	WET				2016	2018	2016	2018
AR-TF2	Rio Pipo bog	●	-54.8269	-68.4549	60	WET		5.5	530	2016	2018	2016	2018
BR-CST	Coastline Serra Talhada	●	-7.9682	-38.3842	468	DNF	Bsh	25.2	642	2014		2014	2015
BR-Npw	Northern Pantanal Wetland	●	-16.498	-56.412	120	WSA	Aw	24.9	1486	2013	2017	2013	2017
BR-Sat	Santarem-Km67-Primary Forest	●	-2.8567	-54.9589	88	EBF	Am	26.13	2074.79	2002		2002	2011
BR-Sa3	Santarem-Km83-Logged Forest	●	-3.018	-54.9714	100	EBF	Am	26.12	2043.77	2000	2003	2000	2004
CA-ARB	Attawapiskat River Bog	●	52.695	-83.9452	90	WET	Dfb	-1.3	700	2010		2011	2015
CA-ARF	Attawapiskat River Fen	●	52.7008	-83.955	88	WET	Dfb	-1.3	700	2010		2011	2015
CA-Cat	British Columbia - 1949 Douglas-fir stand	●	49.8673	-125.3336	300	ENF	Cfb	9.93	1369	1997		1996	2010
CA-Ca2	British Columbia - Clearcut Douglas-fir stand (harvested winter 1999/2000)	●	49.8705	-125.2909	300	ENF	Cfb	9.86	1474	2000		1999	2010
CA-Ca3	British Columbia - Pole sapling Douglas-fir stand	●	49.5346	-124.9004		ENF	Cfb	9.94	1676	2001		2000	2016
CA-Cbo	Ontario - Mixed Deciduous, Borden Forest Site	●	44.3167	-79.9333	120	DBF	Dfb	6.66	876.34	1995		1994	2018
CA-CF1	Churchill Fen Site 1	●	58.6658	-93.83	16.5	WET	Dfc	-6.5	452	2007	2008	2007	2008
CA-CF2	Churchill Fen Site 2	●	58.6658	-93.83	16.5	WET	Dfc	-6.5	452	2008	2011	2008	2011
CA-Cha	New Brunswick - Charlie Lake site 01 (immature balsam fir forest to be thinned in year 3)	●	45.8847	-67.3569	341	MF	Dfb	3.46	971.68	2004	2005	2004	2005
CA-DBB	Delta Burns Bog	●	49.1293	-122.9849	4	WET	Csb	10	1128	2014		2014	2018
CA-ER1	Elera Research Station	●	43.6405	-80.4123	370	CRO	Dfb	6.7	946	2015		2015	2020

You can download data for 390 AmeriFlux sites at ameriflux.lbl.gov.

How do you find the sites (and data) you want to use?

The Site Search tool can help!

(check out the individual site info pages, too)

There are many useful search terms under Advanced Filters. We'll use Flux/Met Measurements.

CA-ER1	Elora Research Station	●	43.6405	-80.023	370	CRO	Dfb	6.7	946	2015	2015	2020
--------	------------------------	---	---------	---------	-----	-----	-----	-----	-----	------	------	------

We'll look at
Available BASE
Flux/Met Data

Filter by Flux/Met Data Variables and Years

To filter by years, enter years and select any or all. To filter by variables, select any or all variables. Use the table to check specific variables to include in the filter. Leave all variables unchecked to search all variables. Click Apply Filter.

Include

Any Variables

All Variables

Has BASE data from the year(s)

1996-2012

Leave field blank to see all years

Must have data from

Any year in range

All years in range

AQUATIC

COND_WATER

DO

PCH4

PCO2

PN2O

PPFD_LW_IN

TW

BIOLOGICAL

DBH

LEAF_WET

SAP_DT

SAP_FLOW

T_BOLE

T_CANOPY

FOOTPRINT

FETCH_70

FETCH_80

FETCH_90

FETCH_FILTER

FETCH_MAX

GASES

CH4

CH4_MIXING_RATIO

CO

CO2

CO2_MIXING_RATIO

HEAT

G

H

LE

SB

SG

SH

CO2_SIGMA

CO2C13

FC

FCH4

FN2O

FNO

FNO2

FO3

H2O

H2O_MIXING_RATIO

H2O_SIGMA

N2O

N2O_MIXING_RATIO

NO

NO2

O3

SC

SCH4

SN2O

SNO

SNO2

SO2

SO3

SLE

MET_ATM

PA

PBLH

RH

T_SONIC

T_SONIC_SIGMA

TA

VPD

MET_PRECIP

D_SNOW

P

P_RAIN

P_SNOW

RUNOFF

STEMFLOW

THROUGHFALL

MET_RAD

ALB

APAR

FAPAR

FIPAR

LW_BC_IN

LW_BC_OUT

LW_IN

LW_OUT

NDVI

NETRAD

PPFD_BC_IN

PPFD_BC_OUT

PPFD_DIF

PPFD_DIR

PPFD_IN

PPFD_OUT

PRI

R_UVA

R_UVB

SPEC_NIR_IN

SPEC_NIR_OUT

SPEC_NIR_REFL

SPEC_PRI_REF_IN

SPEC_PRI_REF_OUT

SPEC_PRI_REF_REFL

SPEC_PRI_TGT_IN

SPEC_PRI_TGT_OUT

SPEC_PRI_TGT_REFL

SPEC_RED_IN

SPEC_RED_OUT

SPEC_RED_REFL

SW_BC_IN

SW_BC_OUT

SW_DIF

SW_DIR

SW_IN

SW_OUT

MET_SOIL

SWC

SWP

TS

TSN

WTD

MET_WIND

MO_LENGTH

TAU

U_SIGMA

USTAR

V_SIGMA

W_SIGMA

WD

WS

WS_MAX

ZL

PRODUCTS

GPP

NEE

RECO

QC_FLAG

FC_SSITC_TEST

FCH4_SSITC_TEST

FN2O_SSITC_TEST

FNO_SSITC_TEST

FNO2_SSITC_TEST

FO3_SSITC_TEST

H_SSITC_TEST

LE_SSITC_TEST

TAU_SSITC_TEST

Apply Filter

Cancel

In this Site Search example, I want to find the sites with methane flux data in BASE collected before 2012.

There are many useful search terms under Advanced Filters. We'll use Flux/Met Measurements.

BP Class (vegetation)

Flux/Met Measurements

Gas Species Measured as reported in BADM

All

BVOCs

CH4

H

H2O

Other

CO2

Available BASE Flux/Met Data

Filter by Data Variables and Years

US-CT	Curlew-Waterfowl-Grassland	416.285	-67.347	180	CWR	DR	N11	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022					
CA-CT	Curlew-Peltandra	45.8847	-67.3569	341	MF	Dfb	3.45	971.68	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CA-Cha	New Brunswick - Charlie Lake site 01 (measured between 10 forest to be thinned in year 3)	45.8847	-67.3569	341	MF	Dfb	3.45	971.68	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CA-DBB	Delta Burns Bog	49.1293	-122.9849	4	WET	Cfb	10	1028	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
CA-ERI	Ebora Research Station	13.6405	-80.4123	370	CRO	Dfb	6.7	946	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033

Filter by Flux/Met Data Variables and Years

To filter by years, enter years and select any or all. To filter by variables, select any or all variables. Use the table to check specific variables to include in the filter. Leave all variables unchecked to search all variables. Click Apply Filter.

Include ☒ Any Variables ☐ All Variables

Has BASE data from the year(s) ☒ Any year in range ☐ All years in range

Leave field blank to see all years

<input type="checkbox"/> AQUATIC	<input type="checkbox"/> CO2_SIGMA	<input type="checkbox"/> SLE	<input type="checkbox"/> PPFD_BC_IN	<input type="checkbox"/> TS
<input type="checkbox"/> COND_WATER	<input type="checkbox"/> CO2C13		<input type="checkbox"/> PPFD_BC_OUT	<input type="checkbox"/> TSN
<input type="checkbox"/> DO	<input checked="" type="checkbox"/> FCH4	<input type="checkbox"/> MET_ATM	<input type="checkbox"/> PPFD_DIF	<input type="checkbox"/> WTD
<input type="checkbox"/> PCH4	<input type="checkbox"/> FN2O	<input type="checkbox"/> PA	<input type="checkbox"/> PPFD_DIR	
<input type="checkbox"/> PCO2	<input type="checkbox"/> FNO	<input type="checkbox"/> PBLH	<input type="checkbox"/> PPFD_IN	<input type="checkbox"/> MET_WIND
<input type="checkbox"/> PN2O	<input type="checkbox"/> FNO2	<input type="checkbox"/> RH	<input type="checkbox"/> PPFD_OUT	<input type="checkbox"/> MO_LENGTH
<input type="checkbox"/> PPFD_UW_IN	<input type="checkbox"/> FNO2	<input type="checkbox"/> T_SONIC	<input type="checkbox"/> PRI	<input type="checkbox"/> TAU
<input type="checkbox"/> TW	<input type="checkbox"/> FO3	<input type="checkbox"/> T_SONIC_SIGMA	<input type="checkbox"/> R_UVA	<input type="checkbox"/> U_SIGMA
	<input type="checkbox"/> H2O	<input type="checkbox"/> TA	<input type="checkbox"/> R_UVB	<input type="checkbox"/> USTAR
		<input type="checkbox"/> VPD	<input type="checkbox"/> SPEC_NIR_IN	<input type="checkbox"/> V_SIGMA
<input type="checkbox"/> BIOLOGICAL	<input type="checkbox"/> H2O_MIXING_RATIO		<input type="checkbox"/> SPEC_NIR_OUT	<input type="checkbox"/> W_SIGMA
<input type="checkbox"/> DBH	<input type="checkbox"/> H2O_SIGMA	<input type="checkbox"/> MET_PRECIP	<input type="checkbox"/> SPEC_NIR_REFL	<input type="checkbox"/> WD
<input type="checkbox"/> LEAF_WET	<input type="checkbox"/> N2O	<input type="checkbox"/> D_SNOW	<input type="checkbox"/> SPEC_PRI_REF_IN	<input type="checkbox"/> WS
<input type="checkbox"/> SAP_DT	<input type="checkbox"/> N2O_MIXING_RATIO	<input type="checkbox"/> P	<input type="checkbox"/> SPEC_PRI_REF_OUT	<input type="checkbox"/> WS_MAX
<input type="checkbox"/> SAP_FLOW	<input type="checkbox"/> NO	<input type="checkbox"/> P_RAIN	<input type="checkbox"/> SPEC_PRI_REF_REFL	<input type="checkbox"/> ZL
<input type="checkbox"/> T_BOLE	<input type="checkbox"/> NO2	<input type="checkbox"/> P_SNOW	<input type="checkbox"/> SPEC_PRI_TGT_IN	
<input type="checkbox"/> T_CANOPY	<input type="checkbox"/> O3	<input type="checkbox"/> P_SNOW	<input type="checkbox"/> SPEC_PRI_TGT_OUT	<input type="checkbox"/> PRODUCTS
	<input type="checkbox"/> SC	<input type="checkbox"/> RUNOFF	<input type="checkbox"/> SPEC_PRI_TGT_REFL	<input type="checkbox"/> GPP
<input type="checkbox"/> FOOTPRINT	<input type="checkbox"/> SCH4	<input type="checkbox"/> STEMFLOW	<input type="checkbox"/> SPEC_RED_IN	<input type="checkbox"/> NEE
<input type="checkbox"/> FETCH_70	<input type="checkbox"/> SN2O	<input type="checkbox"/> THROUGHFALL	<input type="checkbox"/> SPEC_RED_OUT	<input type="checkbox"/> RECO
<input type="checkbox"/> FETCH_80	<input type="checkbox"/> SNO		<input type="checkbox"/> SPEC_RED_REFL	
<input type="checkbox"/> FETCH_90	<input type="checkbox"/> SNO2	<input type="checkbox"/> MET_RAD		<input type="checkbox"/> QC_FLAG
<input type="checkbox"/> FETCH_FILTER	<input type="checkbox"/> SO2	<input type="checkbox"/> ALB	<input type="checkbox"/> FC_SSITC_TEST	
<input type="checkbox"/> FETCH_MAX	<input type="checkbox"/> SO3	<input type="checkbox"/> APAR	<input type="checkbox"/> FCH4_SSITC_TEST	
		<input type="checkbox"/> FAPAR	<input type="checkbox"/> FNO2_SSITC_TEST	
<input type="checkbox"/> GASES	<input type="checkbox"/> HEAT	<input type="checkbox"/> FIPAR	<input type="checkbox"/> FNO2_SSITC_TEST	
<input type="checkbox"/> CH4	<input type="checkbox"/> G	<input type="checkbox"/> LW_BC_IN	<input type="checkbox"/> FNO2_SSITC_TEST	
<input type="checkbox"/> CH4_MIXING_RATIO	<input type="checkbox"/> H	<input type="checkbox"/> LW_BC_OUT	<input type="checkbox"/> FNO2_SSITC_TEST	
<input type="checkbox"/> CO	<input type="checkbox"/> LE	<input type="checkbox"/> LW_IN	<input type="checkbox"/> FNO2_SSITC_TEST	
<input type="checkbox"/> CO2	<input type="checkbox"/> SB	<input type="checkbox"/> LW_OUT	<input type="checkbox"/> FNO2_SSITC_TEST	
<input type="checkbox"/> CO2_MIXING_RATIO	<input type="checkbox"/> SG	<input type="checkbox"/> NDVI	<input type="checkbox"/> H_SSITC_TEST	
	<input type="checkbox"/> SH	<input type="checkbox"/> NETRAD	<input type="checkbox"/> LE_SSITC_TEST	
		<input type="checkbox"/> MET_SOIL	<input type="checkbox"/> TAU_SSITC_TEST	
		<input type="checkbox"/> SWC		
		<input type="checkbox"/> SWP		

Apply Filter

Cancel

Home / Sites / Site Search

Quick Sites: [Sign In to Use](#)

Site Search

[Select Sites](#) [Customize Map](#)

This interface is not yet optimized for small devices.

Include: ☐ Sites with and without Available Data ☒ Sites with Data ☐ Sites without Data

Search Results: 14 sites

Search sites and their content

Clear Search

Copy search results to clipboard

Download Data Using Search Results

Save/Load Site Sets

Save/Load Site Searches

Advanced Filters

Filters

Return sites with "All Chosen Filters"

Include: "Any Chosen Flux/met Data Variables"

X: "1996-2012"

Must have data from: "Any year in range"

X: "FCH4" Has Data: "Yes"

Return sites with

☒ All Chosen Filters☐ Any Chosen Filters

Submit

To select multiple items

General

Geography

Flux/Met Measurements

Gas Species Measured as reported in BADM

All

BVOCs

CH4

H2O

Other

...

Available BASE Flux/Met Data

Filter by Data Variables and Years

Disturbance and Management

Search Results: 14 sites

Only Show Checkmarked Sites

Customize Map

Show Map: None

Site Id	Name	Data	Lat	Long	Elev (m)	Veg	Clim	MAP (°C)	MAP (mm)	Site Start	Site End	Data Start	Data End
US-CRT	Curlew-Walter-Berger cropland	•	41.6285	-83.3471	180	CRO	Dfa	10.1	849	2011	2013	2011	2013
US-Ho1	Howland Forest (main tower)	•	45.2041	-68.7402	60	ENF	Dfb	5.27	1070	1996		1996	2018
US-ICs	Innavait Creek Watershed Wet Sedge Tundra	•	68.6058	-149.311	920	WET	ET	-7.4	318	2007		2007	2020
US-LA1	Pointe-aux-Chenes Brackish Marsh	•	29.5013	-90.4449	0	WET	Cfa	20.7	1625	2011	2012	2011	2012
US-LA2	Salvador WMA Freshwater Marsh	•	29.8587	-90.2869	0	WET	Cfa	20.2	1655	2011	2013	2011	2013
US-MBP	Marcell Bog Lake Peatland	•	47.5051	-93.4893	416	WET	Csa	3.4	780	2007		2009	2019
US-Myb	Mayberry Wetland	•	38.0499	-121.765	-4	WET	Csa	15.9	338	2010		2010	2020
US-NGB	NGEE Arctic Barrow	•	71.28	-156.6092	5.273	SNO	ET	-11.27	171	2012		2012	2019
US-Orv	Olenyok River Wetland Research Park	•	40.0201	-83.0183	221	WET	Cfa	11.63	1499.1	2011	2016	2011	2016
US-PFa	Park Falls/WLEF	•	45.9459	-90.2723	470.00	MF	Dfb	4.33	823	1996		1995	2020
US-Tw1	Twitchell Wetland West Pond	•	38.1074	-121.6469	-5	WET	Csa	15.5	421	2012		2011	2020
US-Tw2	Twitchell Island	•	38.1087	-121.6531	-7	CRO	Csa	15.6	421	2009	2017	2009	2017
US-Uaf	University of Alaska, Fairbanks	•	64.8663	-147.8555	155	ENF	Dwc	-2.9	263	2002		2003	2020
US-WPT	Winous Point North Marsh	•	41.4646	-82.9962	175	WET	Dfa	10.1	849	2011	2013	2011	2013

Now that I've identified the 14 sites that have methane flux data available up to 2012, how do I...

- Download data for those sites?
- Make a map of the sites?
- Save a “site set” to work with later?

- Download data for those sites?

1. Sign In.
2. Click “Download Data Using Search Results.”

Home / Sites / Site Search

Quick Sites: [Sign in to Use](#)

Site Search

[Select Sites](#) [Customize Map](#)

This interface is not yet optimized for small devices.

Include: ☐ Sites with and without Available Data ☒ Sites with Data ☐ Sites without Data

Search Results: 14 sites

Search sites and their content

[Clear Search](#) [Copy search results to clipboard](#) [Download Data Using Search Results](#)

► Save/Load Site Sets

► Save/Load Site Searches

▼ Advanced Filters

Filters

Return sites with: "All Chosen Filters"

Include: "Any Chosen Flux/met Data Variables"

X: "1996-2012"

Must have data from: "Any year in range"

X: "FCH4" Has Data: "Yes"

Return sites with

☒ All Chosen Filters

☐ Any Chosen Filters

[Submit](#)

To select multiple items [?](#)

► General

► Geography

▼ Flux/Met Measurements

Gas Species Measured as reported in BADM [?](#)

All

BVOCs

CH4

H

H2O

Other

CO2

Available BASE Flux/Met Data [?](#)

[Filter by Data Variables and Years](#)

► Disturbance and Management

► IGBP Class (vegetation)

► Koeppen Climate Class

► Precipitation & Air Temp.

Search Results: 14 sites

☐ Only Show Checkmarked Sites

[Customize Map](#) [Show Map: None](#)

<input type="checkbox"/>	Site Id ^	Name	Data	Lat	Long	Elev (m)	Veg	Clim	MAT (°C)	MAP (mm)	Site Start	Site End	Data Start	Data End
<input type="checkbox"/>	► US-CRT	Curtice Walter-Berger cropland	●	41.6285	-83.3471	180	CRO	Dfa	10.1	849	2011	2013	2011	2013
<input type="checkbox"/>	► US-Ho1	Howland Forest (main tower)	●	45.2041	-68.7402	60	ENF	Dfb	5.27	1070	1996		1996	2018

● Download data for those sites?

Download Data

Bulk download in the new file and variable formats is available below (See the [README](#) for further information)

For height / depth and instrument model information, see the [Measurement Height](#) page.

A request for data will give you the following:

- Download Manifest
- Zip file per site containing both Flux-met data and BADM data

BADM data can be downloaded without Flux-met data if BADM only option is selected below.


☐ Download BADM data only

Pick List	Site Sets	Text Input	Site Search
-----------	-----------	------------	-------------

To select sites using Site Search:

1. Go to the [Site Search](#) page.
2. Add and filter sites as needed until the search results contain the desired sites.
3. Click the "Download Data Using Search Results" button.

You will be directed back to the Pick List tab on this page.

 Your search results will replace any sites previously in the "Your Selections" box.

Your Selections: 14 sites

US-CRT: Curtice Walter-Berger cropland
US-Ho1: Howland Forest (main tower)
US-ICs: Imnavait Creek Watershed Wet Sedge
US-LA1: Pointe-aux-Chenes Brackish Marsh
US-LA2: Salvador WMA Freshwater Marsh
US-MBP: Marcell Bog Lake Peatland
US-Myb: Mayberry Wetland
US-NGB: NGEE Arctic Barrow
US-ORv: Olenangy River Wetland Research P
US-PFa: Park Falls/WLEF
US-Twt: Twitchell Wetland West Pond

Clear List

Additional Data Files

- ☐ BADM data for all AmeriFlux sites that have half-hourly data
- ☒ BADM data for all AmeriFlux sites

Intended Use *


Description of Intended Use *

(required)

☒ I acknowledge that I have read and agree to the [AmeriFlux Data Policy](#).

Download All Files

● Download data for those sites?

Cool! 
Four ways to
select sites for
data download

Download Data

Bulk download in the new file and variable formats is available below (See the [README](#) for further information)

For height / depth and instrument model information, see the [Measurement Height](#) page.

Measurement height or soil depth are not included in BADM yet. You can download here.

A request for data will give you the following:

- Download Manifest
- Zip file per site containing both Flux-met data and BADM data

BADM data can be downloaded without Flux-met data if BADM only option is selected below.

☐ Download BADM data only

Pick List

Site Sets

Text Input

Site Search

To select sites using Site Search:

1. Go to the [Site Search](#) page.
2. Add and filter sites as needed until the search results contain the desired sites.
3. Click the "Download Data Using Search Results" button.

You will be directed back to the Pick List tab on this page.

❗ Your search results will replace any sites previously in the "Your Selections" box.

Your Selections: 14 sites

US-CRT: Curtice Walter-Berger cropland
US-Ho1: Howland Forest (main tower)
US-ICs: Imnavait Creek Watershed Wet Sedge
US-LA1: Pointe-aux-Chenes Brackish Marsh
US-LA2: Salvador WMA Freshwater Marsh
US-MBP: Marcell Bog Lake Peatland
US-Myb: Mayberry Wetland
US-NGB: NGEE Arctic Barrow
US-ORv: Olentangy River Wetland Research P
US-PFa: Park Falls/WLEF
US-Tw1: Twitchell Wetland West Pond

Clear List


- Download data for those sites?

Data and Manifest

[< Back to Download Page](#)

Download Manifest

```
#downloadDate:20210426120050
#numberOfSitesDownloaded:14
#emailForSitePls:jqchen@msu.edu,David.Hollinger@unh.edu,gshaver@mbi.edu,seeuskirchen@alaska.edu,msbr
etharte@alaska.edu,kraussk@usgs.gov,randall.k.kolka@usda.gov,tgriffis@umn.edu,baldocchi@berkeley.edu,mst
orn@ibl.gov,bohrrer.17@osu.edu,desai@aos.wisc.edu,harazono2009gl@gmail.com,hiwata@shinshu-
```

 Copy to Clipboard

Data Download URLs

Click on each URL to download the files. Consider using a 3rd party browser tool like [DownThemAll!](#) (FireFox, Chrome) to download all the files at once.

README	US-CRT_BASE-BADM	US-Ho1_BASE-BADM	US-ICs_BASE-BADM	US-LA1_BASE-BADM
US-LA2_BASE-BADM	US-MBP_BASE-BADM	US-Myb_BASE-BADM	US-NGB_BASE-BADM	US-ORv_BASE-BADM
US-PFa_BASE-BADM	US-Tw1_BASE-BADM	US-Twt_BASE-BADM	US-Uaf_BASE-BADM	US-WPT_BASE-BADM
AA-Net_BIF				

Note: The download manifest contains the emails of the data contributors, site information and the data download URLs

● Make a map of the sites?

Select Custom Maps to change base layer and markers

Site Search

Select Sites Customize Map This interface is not yet optimized for small devices.

Include: ☐ Sites with and without Available Data ☒ Sites with Data ☐ Sites without Data

Search Results: 14 sites

Search sites and their content

Clear Search Copy search results to clipboard Download Data Using Search Results

Save/Load Site Sets

Save/Load Site Searches

Advanced Filters

T Filters

Return sites with: "All Chosen Filters"

Include: "Any Chosen Flux/met Data Variables"

K: "1996-2012"

Must have data from: "Any year in range"

K: "FCH4" Has Data: "Yes"

Return sites with

☒ All Chosen Filters

☐ Any Chosen Filters

Submit

To select multiple items

General

Geography

Flux/Met Measurements

Gas Species Measured as reported in BADM

Available BASE Flux/Met Data

Filter by Data Variables and Years

Disturbance and Management

Only Show Checkmarked Sites

Site id	Name	Date	Lat	Long	Elev (m)	Veg	Clim	MAT (°C)	MAP (mm)	Site Start	Site End
US-CRT	Curtice Walker-Berger cropland	41.6285	-83.3471	180	CRO	Dfa	101	849	2011	2012	
US-Hot	Howland Forest (main tower)	45.2041	-68.7402	60	ENF	Dfb	5.27	1070	1996		
US-ICs	Innavat Creek Watershed Wet Sedge Tundra	58.6058	-149.311	920	WET	ET	-7.4	318	2007		
US-LA1	Pointe-aux-Chenes Brackish Marsh	29.5013	-90.4449	0	WET	Cfa	20.7	1625	2011	2012	
US-LA2	Salvador WMA Freshwater Marsh	29.8587	-90.2869	0	WET	Cfa	20.2	1655	2011	2012	
US-MBP	Marcell Bog Lake Pastland	47.5051	-93.4893	416	WET	Csa	3.4	780	2007		
US-Myb	Mayberry Wetland	38.0499	-121.765	-4	WET	Csa	15.9	338	2010		
US-NGB	NGEE Arctic Barrow	71.28	-156.6092	5.273	SNO	ET	-11.27	171	2012		
US-NGC	Clontangy										

Customize Map Show Map: Small

- Make a map of the sites?

Zooming in on two of the 14 original methane flux sites.

They were right near New Orleans (where the 2021 AGU Fall Meeting will be!)

Site Search

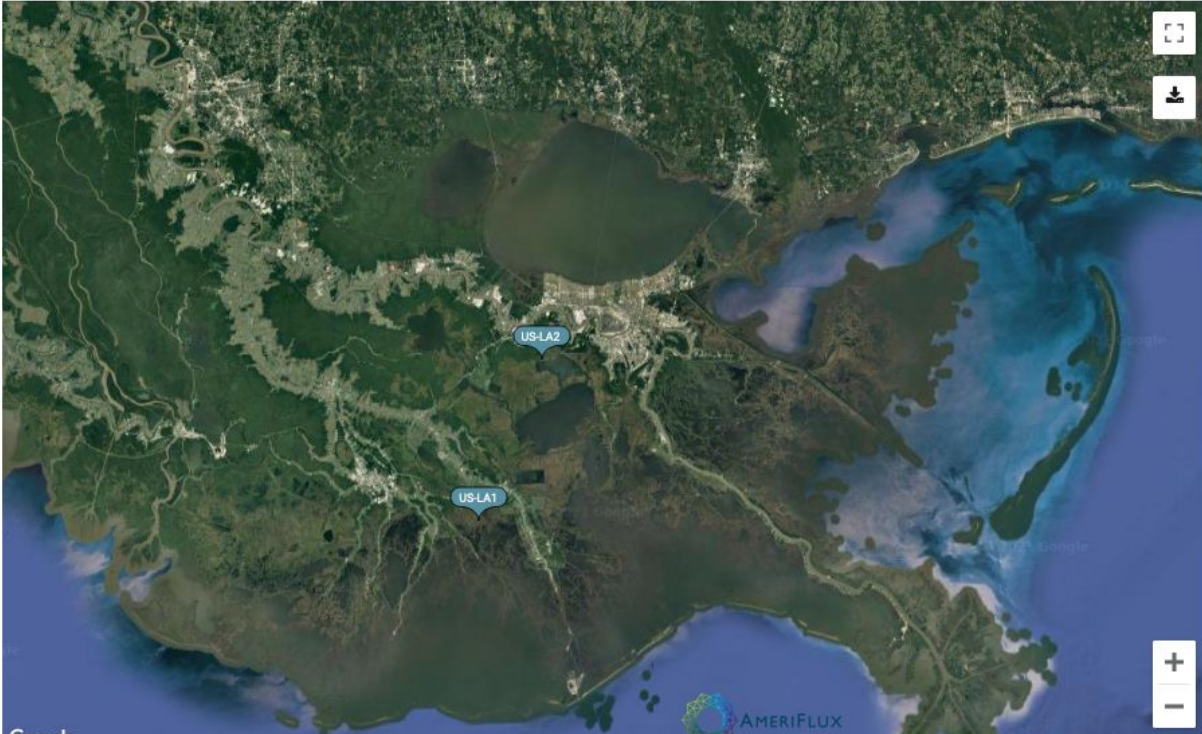
Select Sites

Customize Map

This interface is not yet optimized for small devices.

Select Sites

Map Size: Large



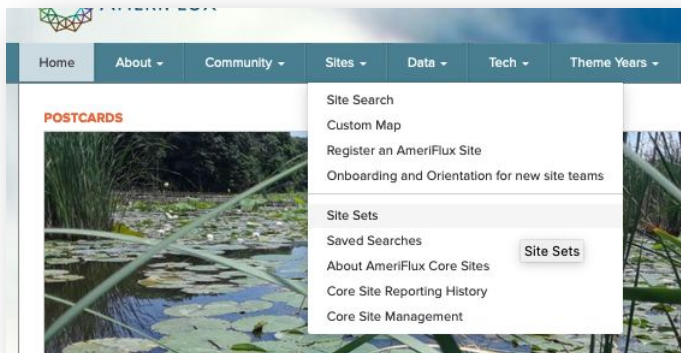
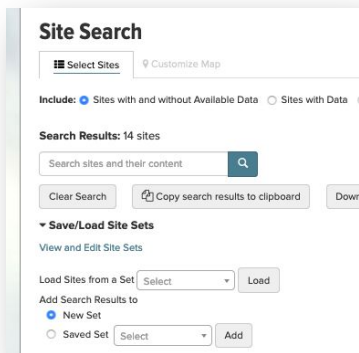
Google

AMERIFLUX

Imagery ©2021 TerraMetrics Terms of Use Report a map error

Note: Your selections on this page are temporarily saved in the system while you remain on the Site Search or Mapping Tool pages.

- Save a “site set” to work with later?



You can save or load a Site Set on the search page.

Or you can go straight to your Site Sets page from the Home menu, if you are logged in.

- Save a “site set” to work with later?

I created a site set for the 14 original methane flux sites.

This is what it looks like on the Site Sets page.

Home / Sites / Site Sets

Quick Sites: Recents Favorites

Site Sets List

+ Add Set Edit List

ID ^	Favorite	Name ^	Number of Sites
1	<input type="radio"/>	AllSitesMarch182020	478
2	<input type="radio"/>	AllUSA20210412	437
3	<input type="radio"/>	California Sites	34
4	<input type="radio"/>	coastalSites	160
5	<input type="radio"/>	Fire2021	46
6	<input checked="" type="radio"/>	Methane_to_2012	14
7	<input type="radio"/>	ONEFlux-Beta_20190923	17
8	<input type="radio"/>	Water Survey	74

Methane_to_2012

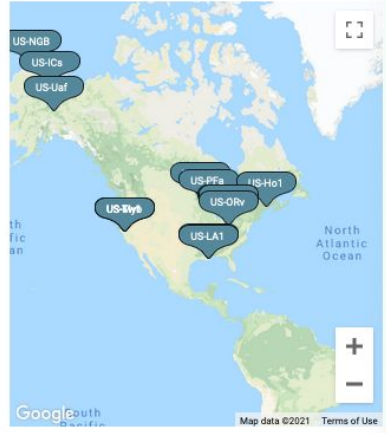
Edit Set

- US-CRT Curtice Walter-Berger cropland
- US-Ho1 Howland Forest (main tower)
- US-ICs Innavait Creek Watershed Wet Sedge Tundra
- US-LA1 Pointe-aux-Chenes Brackish Marsh
- US-LA2 Salvador WMA Freshwater Marsh
- US-MBP Marcell Bog Lake Peatland

Notes

Enter Text

Download for Set:
DOIs as ASCII OK



Google South
Map data ©2021 Terms of Use

- Site sets make it easy to get citations, contact PIs, update searches / maps more

5	<input type="radio"/>	Fire2021	46
6	<input checked="" type="radio"/>	Methane_to_2012	14
7	<input type="radio"/>	ONEFlux-Beta_20190923	17
8	<input type="radio"/>	Water Survey	74

US-MBP
Marcell Bog Lake Peatland

Notes
Enter Text

Download for Set:
DOIs as ASCII
OK

Methane_to_2012-DOI

#Set Name: Methane_to_2012			
#Content: Ameriflux DOIs			
Site ID	Site Name	DOI	Citation
US-CRT	Curtice Walter-Berger cropland	https://doi.org/10.17190/AMF/1246156	Jiquan Chen, Housen Chu Ameriflux US-CRT Curtice Walter-Berger cropland, 10.17190/AMF/1246156
US-Ho1	Howland Forest (main tower)	https://doi.org/10.17190/AMF/1246061	David Hollinger Ameriflux US-Ho1 Howland Forest (main tower), 10.17190/AMF/1246061
US-ICs	Imnavait Creek Watershed Wet Sedge Tundra	https://doi.org/10.17190/AMF/1246130	Eugenie Euskirchen, Gaius Shaver, Syndonia Bret-Harte Ameriflux US-ICs Imnavait Creek Watershed Wet Sedge Tundra, 10.17190/AMF/1246130
US-LA1	Pointe-aux-Chenes Brackish Marsh	https://doi.org/10.17190/AMF/1543386	Ken Krauss Ameriflux US-LA1 Pointe-aux-Chenes Brackish Marsh, 10.17190/AMF/1543386
US-LA2	Salvador WMA Freshwater Marsh	https://doi.org/10.17190/AMF/1543387	Ken Krauss Ameriflux US-LA2 Salvador WMA Freshwater Marsh, 10.17190/AMF/1543387
US-MBP	Marcell Bog Lake Peatland	https://doi.org/10.17190/AMF/1767835	Randy Kolka, Timothy Griffis Ameriflux US-MBP Marcell Bog Lake Peatland, 10.17190/AMF/1767835
US-Myb	Mayberry Wetland	https://doi.org/10.17190/AMF/1246139	Jaclyn Hatala Matthes, Cove Sturtevant, Patty Oikawa, Samuel D Chamberlain, Daphne Szutu, Ariane Arias Ortiz, Joseph Verfaillie, Dennis Baldocchi Ameriflux US-Myb Mayberry Wetland, 10.17190/AMF/1246139
US-NGB	NGEE Arctic Barrow	https://doi.org/10.17190/AMF/1436326	Margaret Torn, Sigrid Dengel Ameriflux US-NGB NGE Arctic Barrow, 10.17190/AMF/1436326
US-ORv	Olenangy River Wetland Research Park	https://doi.org/10.17190/AMF/1246135	Gil Bohrer Ameriflux US-ORv Olenangy River Wetland Research Park, 10.17190/AMF/1246135
US-PFa	Park Falls/WLEF	https://doi.org/10.17190/AMF/1246090	Ankur Desai Ameriflux US-PFa Park Falls/WLEF, 10.17190/AMF/1246090
US-Tw1	Twitchell Wetland West Pond	https://doi.org/10.17190/AMF/1246147	Alex Valach, Daphne Szutu, Elke Eichelmann, Sara Knox, Joseph Verfaillie, Dennis Baldocchi Ameriflux US-Tw1 Twitchell Wetland West Pond, 10.17190/AMF/1246147
US-Twt	Twitchell Island	https://doi.org/10.17190/AMF/1246140	Sara Knox, Jaclyn Hatala Matthes, Joseph Verfaillie, Dennis Baldocchi Ameriflux US-Twt Twitchell Island, 10.17190/AMF/1246140
US-Uaf	University of Alaska, Fairbanks	https://doi.org/10.17190/AMF/1480322	Masahto Ueyama, Hiroki Iwata, Yoshinobu Harazono Ameriflux US-Uaf University of Alaska, Fairbanks, 10.17190/AMF/1480322
US-WPT	Winous Point North Marsh	https://doi.org/10.17190/AMF/1246155	Jiquan Chen, Housen Chu Ameriflux US-WPT Winous Point North Marsh, 10.17190/AMF/1246155

Running Poll (we'll revisit suggestions at the end of the webinar):

What features would you like to see from AmeriFlux?

Link to poll 

pollev.com/ameriflux

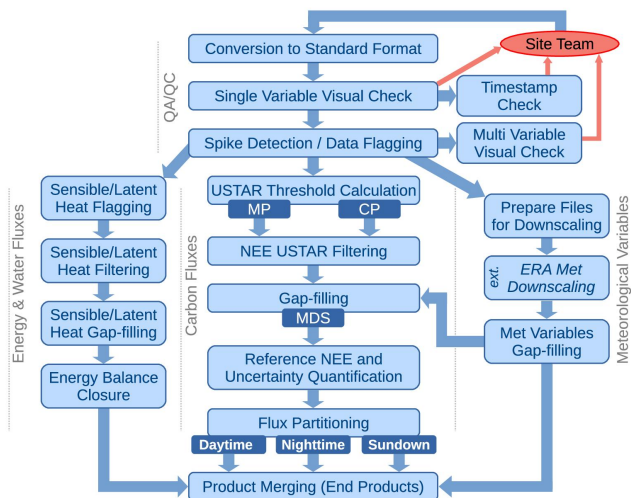
ONEFlux:

Open Network-Enabled Flux processing pipeline



Gilberto Pastorello

- ONEFlux is an eddy covariance data processing codes package
- Key features: USTAR filtering, met/flux gap-filling, CO₂ flux partitioning, uncertainty estimates, ...



For more, check out:

Data Descriptor | [Open Access](#) | Published: 09 July 2020


- Paper: **The FLUXNET2015 dataset and the ONEFlux processing pipeline for eddy covariance data**

Gilberto Pastorello , Carlo Trotta, [...] Dario Papale 

Scientific Data 7, Article number: 225 (2020) | [Cite this article](#)

<https://www.nature.com/articles/s41597-020-0534-3>

- Quick-start guide (flux variables):
<https://fluxnet.org/data/fluxnet2015-dataset/variables-quick-start-guide/>

- Webinar:
 Requirements for processing data from an AmeriFlux site using ONEFlux



Danielle Christianson



Housen Chu



Gilberto Pastorello



Dario Papale

AMP webinar series
October 19th, 2020

<https://youtu.be/JPJnfckAMtI>

FLUXNET Data Product ...*from ONEFlux Processing*

FLUXNET2015

<https://fluxnet.org/data/fluxnet2015-dataset/>

Up to 2014

Last update Feb 2020 (additional metadata)

AmeriFlux FLUXNET Beta Product

<https://ameriflux.lbl.gov/data/download-data-oneflux-beta/>

Largely compatible with FLUXNET2015

More recent AmeriFlux data



Xinchen
Lu

AmeriFlux FLUXNET Product (*in prep.*)

<https://ameriflux.lbl.gov/>

Production runs for AmeriFlux sites; currently starting collection of additional metadata to allow processing

First few sites to be made available *Sep 2021*

AmeriFlux Data - collaborating resources

Collaborating networks - e.g., Phenocam

Collaborating agencies - e.g., NASA, USGS

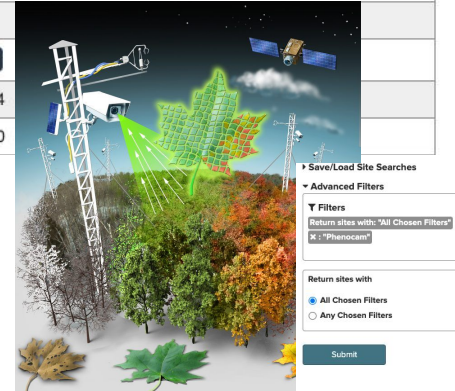
Collaborating codebases

[DAAC Home](#) > [Get Data](#) > [Science Themes](#) > [Vegetation and Forests](#) > Landing page

PhenoCam Dataset v2.0: Digital Camera Imagery Network, 2000-2018

Overview

DOI	https://doi.org/10.3334/ORNLDAAC/1689
Version	2
Project	Vegetation
Published	2019-09-04
Updated	2019-10-10



To select multiple items

General
Keyword(s)

e.g., river, fire

Search for keywords in

- ☒ Site Id, Name, and Description
☐ Site Id
☐ Site Name
☐ Site Description

Site Start

e.g., 1999, 1999 to 2003

Site End

e.g., 1999, 1999 to 2003

Site Team Member

e.g., Litwak, Wofsy

Affiliated Networks

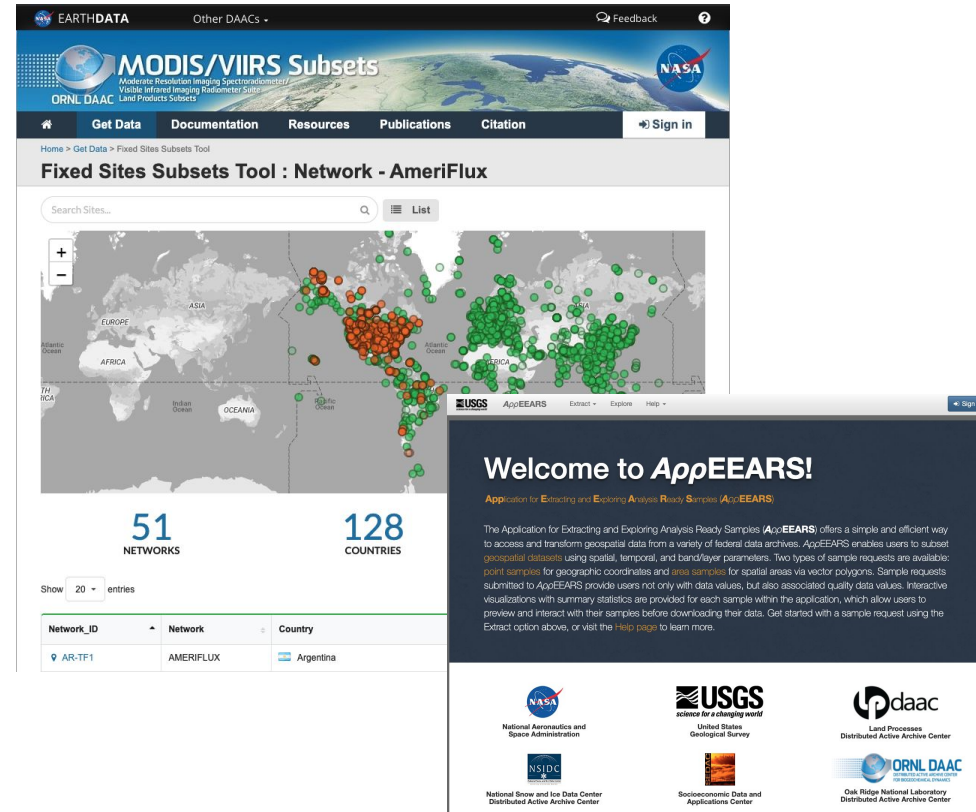
All
Fluxnet-Canada
LBA
LTAR
LTER
MerFlux
NEON
Phenocam

AmeriFlux Data - collaborating resources

Collaborating networks - e.g., Phenocam

Collaborating agencies - e.g., NASA, USGS

Collaborating codebases



The screenshot shows the MODIS/VIIRS Subsets website interface. The top navigation bar includes links for Get Data, Documentation, Resources, Publications, Citation, and Sign In. The main heading is "Fixed Sites Subsets Tool : Network - AmeriFlux". Below this is a search bar and a map of the world with green and orange dots representing data points. The map shows a high density of points in North America, particularly in the United States and Canada. Below the map, there are statistics for "51 NETWORKS" and "128 COUNTRIES". A table lists the networks and countries, with one entry visible: "AR-TF1" under Network_ID, "AMERIFLUX" under Network, and "Argentina" under Country.

51 NETWORKS 128 COUNTRIES

Show 20 entries

Network_ID	Network	Country
AR-TF1	AMERIFLUX	Argentina

Welcome to **AppEEARS!**

Application for Extracting and Exploring Analysis Ready Samples (AppEEARS)

The Application for Extracting and Exploring Analysis Ready Samples (AppEEARS) offers a simple and efficient way to access and transform geospatial data from a variety of federal data archives. AppEEARS enables users to subset geospatial datasets using spatial, temporal, and band/layer parameters. Two types of sample requests are available: point samples for geographic coordinates and area samples for spatial areas via vector polygons. Sample requests submitted to AppEEARS provide users not only with data values, but also associated quality data values. Interactive visualizations with summary statistics are provided for each sample within the application, which allow users to preview and interact with their samples before downloading their data. Get started with a sample request using the Extract option above, or visit the Help page to learn more.

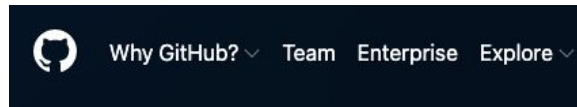
NASA National Aeronautics and Space Administration NSIDC National Snow and Ice Data Center Distributed Active Archive Center USGS United States Geological Survey Socioeconomic Data and Applications Center daac Land Processes Distributed Active Archive Center ORNL DAAC Oak Ridge National Laboratory Distributed Active Archive Center

AmeriFlux Data - collaborating resources

Collaborating networks - e.g., Phenocam

Collaborating agencies - e.g., NASA

Collaborating codebases



AmerifluxR

The Ameriflux R toolbox is a collection of functions to facilitate the retrieval and processing of Ameriflux data.

[View the Project on GitHub](#)
khufkens/amerifluxr

Download
ZIP File

Download
TAR Ball

View On
GitHub

AmeriFluxR

AmeriFluxR is a R toolbox to facilitate easy Ameriflux Level2 data exploration and downloads through a convenient R [shiny](#) based GUI. I'll integrate support for Level3 data in the near future as well as some additional functionality to summarize the data more concisely.

- NOTE: bugs bugs bugs, this is an initial release and given my limited testing platforms the application might be especially buggy on Windows. Relative paths have been an issue as well, since for development purposes I need to run the code unpackaged (some of those might sneak in). If you find any bug, create a bug report on my GitHub page.

Installation

You can quick install the package by installing the following dependencies

```
install.packages(c("rvest", "data.table", "curl", "RCurl", "DT", "shiny"))
```

Recent data user experiences



Mallory Barnes
Assistant Prof.
Indiana University



Minkyu Moon
Postdoc
Boston University



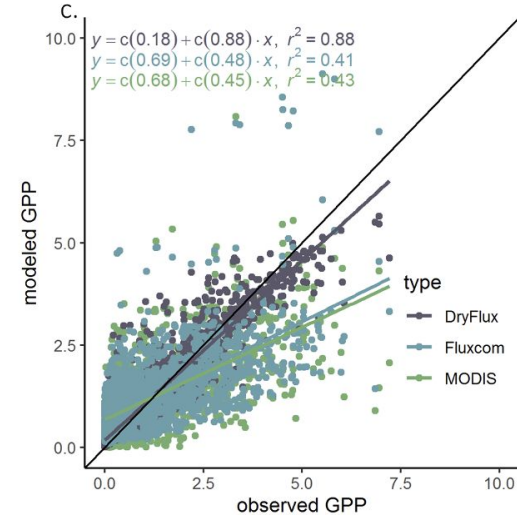
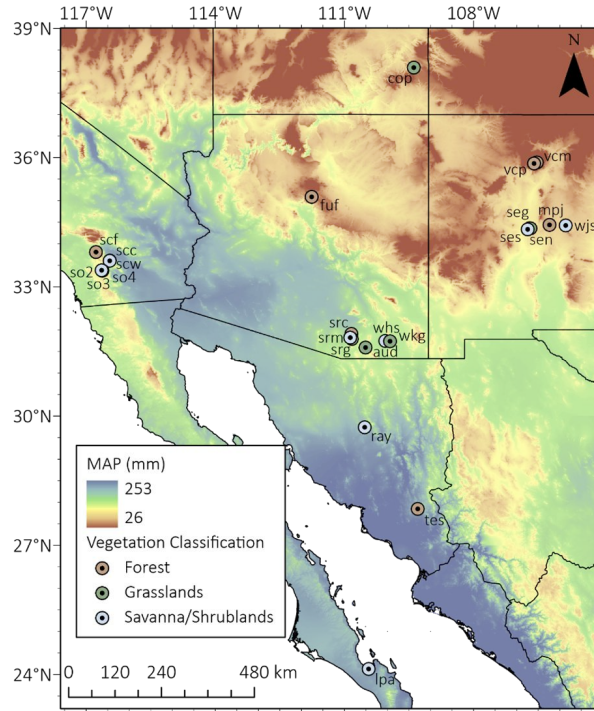
Sophie Ruehr
Grad Student
UC Berkeley

Recent data user experiences



Mallory Barnes
Assistant Prof.
Indiana University

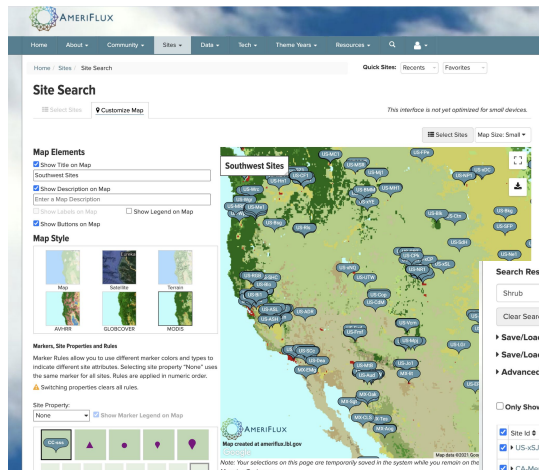
Recent science enabled by AmeriFlux: Machine learning upscaling of dryland fluxes



Barnes et al. 2021: Ecohydrological water-carbon coupling improves dryland carbon flux prediction of average uptake, interannual variability, and drought *in review*

Recent data user experiences

- AmeriFlux <-> AppEEARS makes it easy to get point remote sensing data!



Search Results: 33 sites (33 are checked)

Shrub

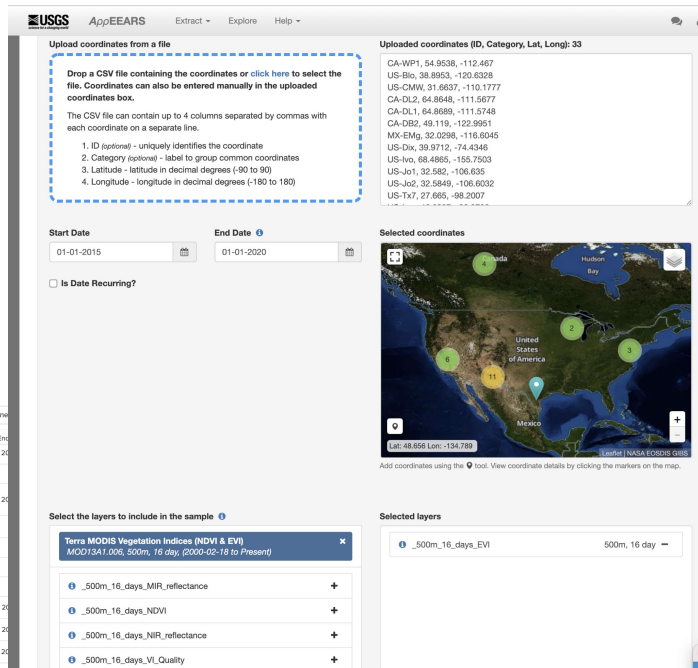
Save/Load Site Sets

Save/Load Site Searches

Advanced Filters

Only Show Checked Sites

Site ID	Name	Date	Lat	Long	Elev (m)	Usg	Clim	MAF (°C)	MAP (mm)	Site Start	Site End	Date Start	Date End
US-SLJ	NEON San Joaquin Experimental Range (SER)	•	37.088	-119.723	368	SAV	Oia	16.4	539.62	2018		2018	2018
CA-Mer	Ontario - Eastern Piedmont, Mer Bleue	•	45.4094	-75.5186	70	WET	Dfb	6	943	1998			
US-Rpf	Poker Flat Research Range: Succession from fire scar to deciduous forest	•	65.1198	-147.4290	497	DBF	Dwc	-0.8	450	2008		2008	2018
MX-Ray	Rayon, monsoon subtropical shrubland	•	29.7400	-110.5300	632	WSA	Bsh	21.4	487	2008	2014		
CA-RPh	Robinsons_Natural_Ilog_NL	•	48.2604	-58.6632	150	OSH	Dfb	5	1340.4	2014			
CA-RPp	Robinsons_Pastland_Pasture_NL	•	48.2632	-58.6670	162	OSH	Dfb	5	1340.4	2014			
US-Sag	Sag River	•	69.5131	-148.5676	170	WET	Dfb	-8	121	1996	1996		
US-LSI	San Pedro River Lewis Springs Section Grassland	•	31.5615	-110.1403	1230	GRA	Bsh	17	288	2003	2007	2002	2018
US-LS2	San Pedro River Lewis Springs Savanna	•	31.5659	-110.1344	1240	SAV	Bsh	17	288	2003	2007	2002	2018
CA-SPI	Sawatchwater - Western Boreal, Forest burned in 1977	•	54.4850	-105.8176	536	ENF	Dfb	0.4	470	2004	2006	2003	2018
US-Ses	Sevilleta shrubland	•	34.3349	-106.7442	1604	OSH	Bsk	13.722	275.082	2007		2007	2018
US-SCa	Southern California Climate Gradient - Coastal Sage	•	33.7343	-117.6959	470	OSH				2007		2008	2016
US-SCc	Southern California Climate Gradient - Desert Chaparral	•	33.8094	-116.4505	1280	OSH				2007			
US-SSc	Strawberry Swamp	•	33.3302	-79.2492	0	WET	Cfa	18.1	1300	2015	2016		
CA-TVC	Trail Valley Creek	•	68.7462	-193.5017	85	OSH	Dfb	-8.2	340.6	2013	2017	2017	2017
US-DPC	US Dairy Forage Research Center, Prairie du Sac	•	43.3448	-89.7107	264.9	CRO	Dfb	7.65	787	2018		2018	2020
US-Whs	Walnut Gulch Lucky Hills Shrub	•	31.7438	-110.0522	1370	OSH	Bsk	17.6	320	2007		2007	2020



Recent data user experiences

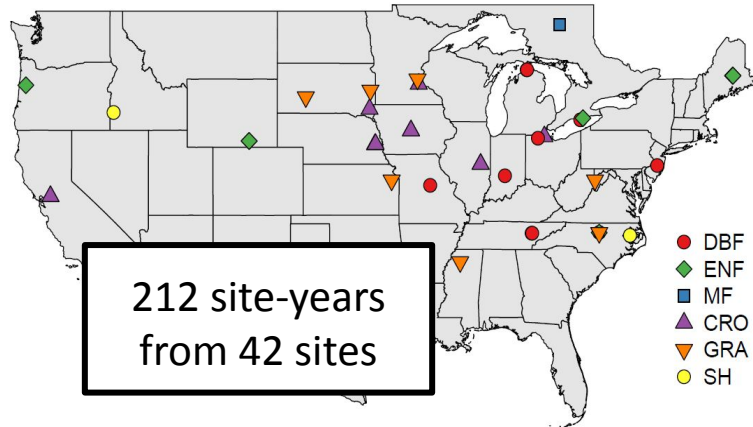


Minkyu Moon
Postdoc
Boston University
[LCSC Group](#)

- **Research Interest**

remote sensing; vegetation phenology; forest ecology

- **A multi-site synthesis and remote sensing study**



- Hard to sort out sub-data set based on user's demand e.g., by...
 - vegetation type
 - data duration
 - variables
 - ancillary data (e.g., NEON, PhenoCam, etc.)
 - ...

Moon et al., 2020 Modification of surface energy balance during springtime: The relative importance of biophysical and meteorological changes. *AFM*, <https://doi.org/10.1016/j.agrformet.2020.107905>

Recent data user experiences



Minkyu Moon
Postdoc
Boston University

- A package program → Updated “AmerifluxR”?

e.g., “[MODISTools](#)” or “[phenocamr](#)” packages in R

- From data download to simple analysis...

Example functions...

- Function 1

```
get_sites(veg_type = "DB",  
          duration = 5,  
          neon = TRUE,  
          badm = TRUE,  
          v_include = "soil heat flux",  
          ...)
```

- Function 2

```
aero_heightc(site = "US-Ha1",  
             Inputs = "...",  
             ...)
```

Recent data user experiences

Starting a multi-site synthesis



Sophie Ruehr
Grad Student
UC Berkeley

Site Search

Select Sites

Customize Map

Include:

☒ Sites with and without Available Data

☐ Sites with Data

☐ Sites without Data

Search Results: 0 sites

Search sites and their content

Q

Clear Search

Copy search results to clipboard

Download Data Using Search Results

Save/Load Site Sets

Save/Load Site Searches

Advanced Filters

Filters

Return sites with: "All Chosen Filters"

X : "BADM"

X : "CO2"

X : "CSH"

X : "CRO"

X : "BSV"

X : "SAV"

X : "OSH"

X : "MF"

Return sites with

☒ All Chosen Filters

☐ Any Chosen Filters

Submit

To select multiple items

General

Geography

Flux/Met Measurements

Gas Species Measured as reported in

BADM

Isotopes

Aerosols

H

H2O

Other

CH4

CO2

BVOCs

Available BASE Flux/Met Data

Filter by Data Variables and Years

IGBP Class (vegetation)

CSH - Closed Shrublands: Lands with woody vegetation

CRO - Croplands: Lands covered with temporary crops

BSV - Barren Sparse Vegetation: Lands with sparse, low-growing vegetation

SAV - Savannas: Lands with herbaceous plant life and trees

OSH - Open Shrublands: Lands with woody vegetation

MF - Mixed Forests: Lands dominated by trees

GRA - Grasslands: Lands with herbaceous plant life

CVM - Cropland/Natural Vegetation Mosaic

Koeppen Climate Class

All Climate Classes

Subarctic: severe winter, no dry season, cool summer

Warm Summer Continental: significant precipitation in summer

Humid Continental: humid with severe winter

Temperate Highland: dry winter, cool summer

Temperate Highland: dry winter, warm summer

Humid Subtropical: dry winter, hot summer

Mediterranean: mild with dry, warm summer

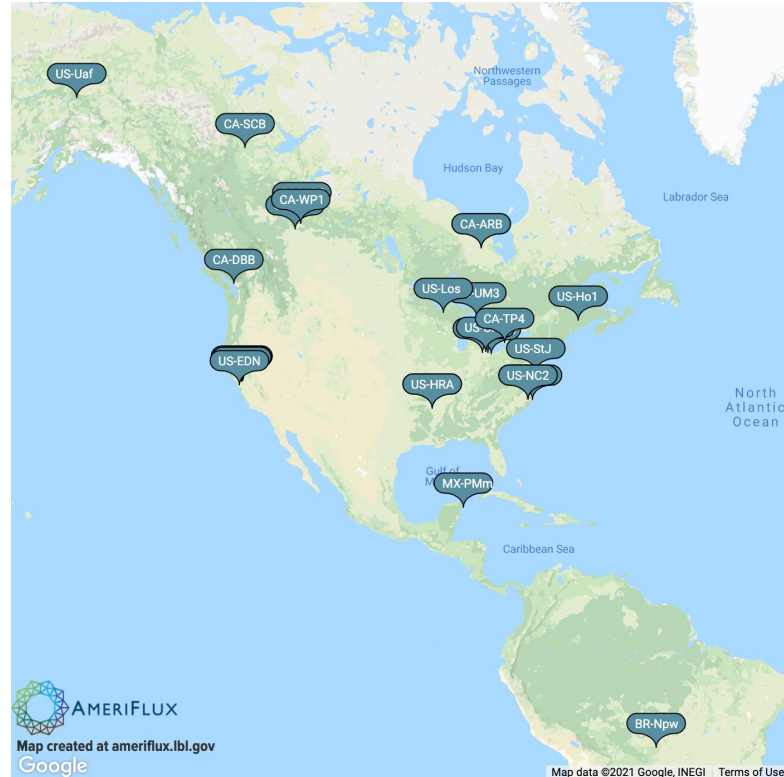


Recent data user experiences



Sophie Ruehr
Grad Student
UC Berkeley

AmeriFlux sites reporting water table depth



Recent data user experiences



Sophie Ruehr
Grad Student
UC Berkeley

The screenshot shows the website ameriflux.lbl.gov/data/aboutdata/data-variables/#timestamps. The page title is "Half-Hourly / Hourly Data Upload Format". The breadcrumb trail is "Home / Data / About Data / Data Variables". The page content includes a list of data variables and their upload rules.

Meas	How to Up	The rules desc
BAD	• Data Proc	• Tempo
Down	• Data Proc	• Data v
Data	• BADM pro	• Data v
Data Blog	information	filling, l

The rules gene data uploads b data distribut Half-hourly / H

The rules desc between any two sequential values.

- **Tempo**
- **Data v**
- **Data v**

We refer to general formats described in [Data Variables](#) and add additional instructions specific to uploading for:

- Data processing
- Temporal representativeness and timestamps
- File format and content
- Data Variable: Base names
- Data Variable: Qualifiers

* Contact ameriflux-support@lbl.gov if you need to upload data reported at other intervals.

Poll:

What features would you like to see from
AmeriFlux?

Link to poll



pollev.com/ameriflux

What features would you like to see from AmeriFlux?

Top



Thank you!

Special thanks to:

- Our user panel
- Our funders (DOE Office of Science)
- The AmeriFlux data contributors
- The AmeriFlux Management Project Team
- You, for putting the data to such great use